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1877. Bryological Notes. 2: 109.
1877. Notes on *Erpodium biseriatum* (?). 2: 142.
1878. Notes on Hepaticology. 3: 6.
1878. Bryological Notes. 3: 29.
1878. *Polytrichum tenue* and *P. brachyphyllum*. 3: 70.
1879. Some New Musci. 4: 150.
1879. Some New Musci. 4: 161. New York Botanical Garden.
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DR. RÖLL'S PROPOSALS FOR THE NOMENCLATURE OF SPHAGNUM.

A LeROY ANDREWS.

A circular of twelve type-written pages distributed by the Secretary of the International Botanical Congress bears the title: "Anträge betr. Aenderungen und Zusätze zu den internationalen Regeln von Wien in Bezug auf die Nomenclatur der Sphagna. Von Dr. Röhl in Darmstadt." The last two pages in French contain a brief résumé of the essential points. The circular is in substance a request that Röhl's style of nomenclature be given, through the sanction of the International Botanical Congress meeting next summer at Brussels, the preference over the more current one of Warnstorf. The suggestions are formulated in proposed supplements or amendments to Articles 12, 37, 41, 43, 48 and 50 of the international botanical rules adopted at Vienna in 1905, these amendments to apply only to *Sphagnum*. They embrace the following points:

1. The species of *Sphagnum* are in their nature series of forms, and, this being the case, it is impossible to set up a *forma typica*. Species thus based upon a single form or a herbarium-specimen are of little value, and in cases of doubt the name of the author who has given the diagnosis of a series of forms should be given the preference over that of one who described a species from a single form.
2. The description or diagnosis of a species, *i. e.* of a series of forms, should be short and contain only the characteristic diagnostic characters; it should not repeat the characters of the genus, nor yet those of the varieties and forms.
3. The extension or completion of a description or diagnosis already existent does not justify one in changing the name of the species concerned or that of its author.
4. When within a genus a group is changed in rank or moved into

another group where it retains the same rank, the first author shall be cited, and the author making the changes shall be cited, if at all, in parenthesis, not vice versa as ruled by the Vienna Congress in Art. 43. As examples and explanations under these various heads, with the help of recommendations as *e. g.* that color should not be made the basis for specific or varietal names, and an appendix, in which he asserts among other things that the most of Warnstorf's exotic species are questionably of specific value, Dr. Röhl contrives to insert a good part of his present views upon *Sphagnum*.

This circular as giving a relatively concise statement of Röhl's point of view in his controversy with Warnstorf may justify a word of explanation and perhaps of criticism. Our present knowledge of the anatomy of *Sphagnum* dates very largely from Schimper's excellent monograph.¹ To the facts therein set forth there have since been slight additions, notably Russow's studies on the pores and other membrane-gaps of the empty leaf-cells. The anatomical details thus made available have formed the basis of subsequent systematic treatment, having been admirably used by Russow in his papers on the European forms, while Warnstorf aided and supplemented Russow's work on these forms and extended the same methods to a study of the exotic (*i. e.* non-European) species. Röhl published in 1885 and 1886 in *Flora* his sphagnological system for the European forms,² in which he had already adopted the views expressed in his present recommendations, viz.: that a species is a series of forms (*i. e.* is essentially a generic idea) and that a typical form of a species can not exist. It will be seen at once that the great divergence from the current conception of a species claimed for himself by Dr. Röhl is mostly an imaginary one, and that his "system" is an offence against the accepted principles of binomial nomenclature rather than the dawning of a great light. The obviously fallacious conclusion that *Sphagnum* is so different from all other genera of the vegetable kingdom, that it must needs have principles of nomenclature all its own rests upon a misconception of the binomial system's typical form. The botanist operating with a type-form does so as I understand the matter for the convenience and accuracy of scientific nomenclature, and not necessarily with the idea imputed to him by Dr. Röhl that all members of the species are exact duplicates of the "typical form." Dr. Röhl's system is simply not binomial, and it is for this reason that it has been so difficult to give it a place in a system that is

1. Published in French. "Mém. p. s. à l'hist. nat. des Sphaignes". Paris, 1857; in German with slight additions as "Versuch einer Entwicklungsgeschichte der Torfmoose," in 1858.

2. "Zur Systematik der Torfmoose."

binomial. The second point suggested by Röhl operates again in the direction of increasing the existing difficulties, viz. : the fact that his descriptions are inadequate. How an incomplete description of a species can be preferable to a complete one is difficult to see, especially as in this case where the descriptions of the component varieties give one often hardly a clue to what they stand for. Under the circumstances it is not surprising that while some of Röhl's new series of forms contained no distinct species at all, others included two or three. Röhl's third point is entirely superfluous, as it is already adequately covered by the Vienna rules, while his fourth point involves merely the unimportant change that the author's name now cited in parenthesis shall exchange places with the one outside, which, if adopted, must of course be accepted for the vegetable kingdom as a whole, not for *Sphagnum* alone.

By what license Dr. Röhl refers to his as the "new" system in sphagnology¹ is difficult to see. It is, viewed in the light of scientific progress, antiquated and reactionary in the extreme. I believe it was Limpricht who referred to that style of sphagnological nomenclature of which it is the extreme representative as "pre-Linnaean". Warnstorf has in his last comprehensive work upon European *Sphagnum*² expressed himself upon the absurdity of naming endless varieties and forms, and it is sincerely to be hoped that he will in his forthcoming monograph upon the genus act upon the courage of his convictions in this respect. There is, be it said, a word of truth in Röhl's contention that a species based upon a single specimen, to which no subsequently found specimen can be referred, is at best a dubious one. This is in principle subscribed to by Warnstorf in his descriptions of exotic species, which he expressly states³ are tentative and may later upon the collection of further material be dissolved into larger specific groups, and we may doubtless expect that Herr Warnstorf will in his monograph himself undertake the necessary revision.

Whatever Dr. Röhl has contributed to our knowledge of *Sphagnum*, and no one will deny that his observations contain such contributions, he may rest assured science will accept with gratitude: it is by no means impossible that it may even employ some of his names, but his system in its entirety it can certainly not make its own. A ruling that the first variety under each of Röhl's new species be considered as its type would settle the vexed question as to the validity of certain of his names, notably *Sphagnum plumulosum*; the alternative is to discard his names altogether as non-binomial, which is the course pursued by practically all recent bryologists except Roth.

Ithaca, New York.

1. Hedwigia 47. pp. 330 ff. 1908.

2. Kryptogamenflora der Mark Brandenburg I. pp. 328, 334.

3. Hedwigia 30, p. 175. 1891.